

What is Claimed is:

1. An electrostatic discharge system for use in an enclosure for housing a circuit board capable of electrically connecting to a backplane in the enclosure, the circuit board including at least one ground pin extending from
5 the circuit board, the electrostatic discharge system comprising:

a gasket, mounted within the enclosure, the ground pin capable of engaging and deforming the gasket upon insertion of the circuit board into the enclosure and prior to electrical connection of the circuit board with the backplane, the gasket capable of conducting an electric
10 charge; and

a ground path from the gasket to ground.
2. An electrostatic discharge system for use in an enclosure as recited in claim 1, the gasket mounted on a flange within the enclosure at a height so
15 that the ground pin partially compresses the gasket upon insertion of the printed circuit board into the enclosure.
3. An electrostatic discharge system for use in an enclosure as recited in claim 2, the gasket mounted to the flange with an adhesive.
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4. An electrostatic discharge system for use in an enclosure as recited in claim 3, wherein the adhesive is electrically conductive.

5. An electrostatic discharge system for use in an enclosure as recited in claim 2, the gasket mounted to the flange by screws.

6. An electrostatic discharge system for use in an enclosure as recited in
5 claim 2, the gasket mounted to the flange by rivets.

7. An electrostatic discharge system for use in an enclosure as recited in claim 1, the gasket formed of a spring-like material capable of partially deforming upon contact with the ground pin.

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8. An electrostatic discharge system for use in an enclosure as recited in claim 1, the gasket formed of an electrically conductive material.

9. An electrostatic discharge system for use in an enclosure as recited in
15 claim 1, the gasket coated with an electrically conductive material.

10. An electrostatic discharge system for use in an enclosure as recited in claim 9, wherein the electrically conductive material is at least one of beryllium copper, stainless steel or nylon with metallic threads.

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11. An electrostatic discharge system for use in an enclosure for housing a circuit board capable of electrically connecting to a backplane in the enclosure, the circuit board including at least one ground pin extending from the circuit board, the electrostatic discharge system comprising:

an elastic, electrically conductive material mounted within the enclosure in a position so as to be engaged by the ground pin upon insertion of the circuit board into the enclosure and prior to electrical connection of the circuit board with the backplane; and

5 a ground path from the elastic, electrically conductive material to ground through the enclosure.

12. An electrostatic discharge system for use in an enclosure as recited in claim 11, the elastic, electrically conductive material comprising a gasket
10 mounted within the enclosure.

13. An electrostatic discharge system for use in an enclosure as recited in claim 11, the elastic, electrically conductive material comprising a wire mesh.

15 14. An electrostatic discharge system for use in an enclosure as recited in claim 11, the elastic, electrically conductive material comprising a polymer having an electrically conductive coating.

15. An electrostatic discharge system for use in an enclosure for housing a
20 plurality of circuit boards capable of electrically connecting to a backplane in the enclosure, the circuit boards being inserted into the housing and each circuit board of the plurality of circuit boards including at least one ground pin extending from the circuit board, the electrostatic discharge system comprising:

a strip of elastic, deformable and electrically conductive material mounted within the enclosure in a position so as to be engaged by the ground pin on each circuit board upon insertion of each circuit board into the enclosure and prior to electrical connection of the circuit board being inserted with the backplane; and

5 a ground path from the elastic, electrically conductive material to ground through the enclosure.

16. An electrostatic discharge system for use in an enclosure as recited in claim 15, the strip of elastic, deformable and electrically conductive material comprising a gasket mounted on a flange within the enclosure at a height so that the ground pin partially compresses the gasket upon insertion of each printed circuit board into the enclosure.

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17. An electrostatic discharge system for use in an enclosure as recited in claim 16, the gasket mounted to the flange with an adhesive.

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18. An electrostatic discharge system for use in an enclosure as recited in claim 15, the strip of elastic, deformable and electrically conductive material having an area of contact with the ground pin upon engagement of the ground pin with the strip of elastic, deformable and electrically conductive material capable of dissipating at least 25 amperes of electrical current away from each printed circuit board.

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19. An electrostatic discharge system for use in an enclosure as recited in claim 15, the strip of elastic, deformable and electrically conductive material comprising a first strip of elastic, deformable and electrically conductive material, the first strip of elastic, deformable and electrically conductive material being mounted below a path, and extending upward into the path, of a ground pin on each printed circuit board as each printed circuit board is inserted into the enclosure,

the electrostatic discharge system further comprising a second strip of elastic, deformable and electrically conductive material, the second strip of elastic, deformable and electrically conductive material being mounted spaced from and juxtaposed to the first strip of elastic, deformable and electrically conductive material and above the path, and extending downward into the path, of a ground pin on each printed circuit board as each printed circuit board is inserted into the enclosure.

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20. An electrostatic discharge system for use in an enclosure for housing a plurality of circuit boards capable of electrically connecting to a backplane in the enclosure, the circuit boards being inserted into the housing and each circuit board of the plurality of circuit boards including a first pin extending from the circuit board adjacent a first edge of the circuit board and including a second pin extending from the circuit board adjacent a second edge of the circuit board, the second edge opposite the first edge, the electrostatic discharge system comprising:

at least a first strip of elastic, deformable and electrically
conductive material mounted within the enclosure in a position so as to
be engaged by the first pin on each circuit board upon insertion of each
circuit board into the enclosure and prior to electrical connection of the
5 circuit board being inserted with the backplane, the at least first strip of
elastic, deformable and electrically conductive material establishing a
primary ground path for dissipating static charge from the circuit board;

at least a second strip of elastic, deformable and electrically
conductive material mounted within the enclosure in a position so as to
10 be engaged by the second pin on each circuit board upon insertion of
each circuit board into the enclosure and prior to electrical connection
of the circuit board being inserted with the backplane, the at least
second strip of elastic, deformable and electrically conductive material
establishing a redundant ground path for dissipating static charge from
15 the circuit board; and

a ground path from the first and second elastic, electrically
conductive materials to ground through the enclosure.

21. An electrostatic discharge system for use in an enclosure as recited in
20 claim 20, the at least first and second strips of elastic, deformable and
electrically conductive material comprising gaskets.

22. An electrostatic discharge system for use in an enclosure as recited in
claim 20, the at least first strip of elastic, deformable and electrically

conductive material comprising a first strip of elastic, deformable and electrically conductive material and a third strip of elastic, deformable and electrically conductive material, the first and third strips of elastic, deformable and electrically conductive material each being engaged by the first pin upon
5 insertion of the circuit board into the enclosure.

23. An electrostatic discharge system for use in an enclosure as recited in claim 22, the at least second strip of elastic, deformable and electrically conductive material comprising a second strip of elastic, deformable and
10 electrically conductive material and a fourth strip of elastic, deformable and electrically conductive material, the second and fourth strips of elastic, deformable and electrically conductive material each being engaged by the second pin upon insertion of the circuit board into the enclosure.

15 24. A tolerant electrostatic discharge system for use in an enclosure for housing a circuit board capable of electrically connecting to a backplane in the enclosure, the circuit board including at least one ground pin extending from the circuit board, the electrostatic discharge system comprising:

a gasket, mounted within the enclosure, the ground pin capable
20 of engaging and deforming the gasket upon insertion of the circuit board into the enclosure and prior to electrical connection of the circuit board with the backplane, the gasket capable of conducting an electric charge; and

a ground path from the gasket to ground;

the gasket establishing effective electrostatic dissipation from the circuit board even where the alignment between the at least one ground pin and the enclosure deviates from an expected alignment of the at least one ground pin and the enclosure.

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25. An electrostatic discharge system for use in an enclosure as recited in claim 24, the gasket mounted to the flange with an adhesive.

26. An electrostatic discharge system for use in an enclosure as recited in
10 claim 25, wherein the adhesive is electrically conductive.

27. An electrostatic discharge system for use in an enclosure as recited in claim 24, the gasket formed of a spring-like material capable of partially deforming upon contact with the ground pin.

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28. An electrostatic discharge system for use in an enclosure as recited in claim 24, the gasket formed of an electrically conductive material.

29. An electrostatic discharge system for use in an enclosure as recited in
20 claim 24, the gasket coated with an electrically conductive material.

30. An electrostatic discharge system for use in an enclosure as recited in claim 24, the gasket establishing effective electrostatic dissipation from the circuit board even where the alignment between the at least one ground pin

and the enclosure deviates from an expected alignment of the at least one ground pin and the enclosure by as much as 1/8 inch.

31. An electrostatic discharge system for use in an enclosure as recited in claim 24, the gasket establishing effective electrostatic dissipation from the circuit board even where the alignment between the at least one ground pin and the enclosure deviates from an expected alignment of the at least one ground pin and the enclosure by as much as 1/4 inch.

32. A tolerant electrostatic discharge system for use in an enclosure for housing a circuit board capable of electrically connecting to a backplane in the enclosure, the circuit board including at least one ground pin extending from the circuit board, the electrostatic discharge system comprising:

a gasket, mounted within the enclosure, the ground pin capable of engaging and deforming the gasket upon insertion of the circuit board into the enclosure and prior to electrical connection of the circuit board with the backplane, the gasket capable of dissipating an electric charge from the printed circuit board where the vertical alignment of the printed circuit board with the enclosure is above, at or below the expected vertical alignment of the printed circuit board with the enclosure; and

a ground path from the gasket to ground;

33. An electrostatic discharge system for use in an enclosure as recited in claim 32, the gasket mounted to the flange with an adhesive.
- 5 34. An electrostatic discharge system for use in an enclosure as recited in claim 33, wherein the adhesive is electrically conductive.
35. An electrostatic discharge system for use in an enclosure as recited in claim 32, the gasket formed of a spring-like material capable of partially
10 deforming upon contact with the ground pin.
36. An electrostatic discharge system for use in an enclosure as recited in claim 32, the gasket formed of an electrically conductive material.
- 15 37. An electrostatic discharge system for use in an enclosure as recited in claim 32, the gasket coated with an electrically conductive material.
38. An electrostatic discharge system for use in an enclosure as recited in claim 32, the gasket capable of dissipating an electric charge from the printed
20 circuit board where the vertical alignment of the printed circuit board with the enclosure is above or below the expected vertical alignment of the printed circuit board with the enclosure by as much as 1/8 inch.

39. An electrostatic discharge system for use in an enclosure as recited in claim 32, the gasket capable of dissipating an electric charge from the printed circuit board where the vertical alignment of the printed circuit board with the enclosure is above or below the expected vertical alignment of the printed circuit board with the enclosure by as much as $\frac{1}{4}$ inch.
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